#22

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of	)
Collins, *et. al*	)
Assignee: Bank of America Corp.	)
Serial Number: 09/611,320	)
Filing Date: July 6, 2000	)
For: Card with Increased	)
Gripability	)

Art Unit: 3722
Examiner: W. Fridie

SUPPLEMENTAL BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following supplemental appeal brief is submitted pursuant to 37 C.F.R. § 1.193(b)(2)(ii), along with a Request for Reinstatement of Appeal Under 37 C.F.R. § 1.193(b)(2). The Notice of Appeal was filed on September 20, 2002 in the above-captioned application. A request for Oral Hearing was also filed on September 20, 2002. The initial Brief on Appeal was filed on November 19, 2002. The Examiner reopened prosecution by an Office Action dated July 2, 2003, in which the Examiner withdrew the finality of the previous rejection, and entered a new rejection of the pending claims.

It is not believed that extensions of time are required. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefore (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 50-0740 referencing docket number 016762.085-US01.

I. REAL PARTY IN INTEREST

Bank of America Corporation is the assignee of the above-captioned application, and is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to appellant, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 24-33 are the only claims pending. Claims 1-23 have been cancelled. All of claims 24-33 stand rejected, and all are the subject of the instant appeal. Claims 24-33 were twice rejected, once in Paper No. 7 dated August 28, 2001, and once in the Office Action dated May 21, 2002. This appeal was initially taken from the second rejection of May 21, 2002, in accordance with 37 C.F.R. § 1.191. In an Office Action dated July 2, 2003, the Examiner has sought to reopen prosecution by replacing the previous rejection with a new rejection of claims 24-33.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the May 21, 2002 rejection.

V. SUMMARY OF INVENTION

The present invention is directed to a credit-card-sized card with a plurality of craters that form a tread disposed on a face of the card. Each crater comprises a lip and a center, with the lip being raised slightly above the face of the card and the center being indented slightly into the face of the card.

The present invention is particularly useful when a number of cards are held in sleeves within a wallet or carrying case. In such circumstances, the cards are often held very tightly within each sleeve, making it difficult remove and use a particular card. The use of craters disposed on the face of a card improves the gripability of that card, making it easier for a user to retrieve it from the wallet or carrying case.

FIGs. 4A-4C (*see* Exhibit A) show a number of embodiments of the present invention. In each of these embodiments, dimples 17 are arranged in various ways to form treads 16 on the face of a card 32. In certain embodiments, the dimples 17 are arranged in triangular or linear patterns, and are positioned near the edges of the card 32, to facilitate the removal of the card 32 from a wallet or carrying case. Of course, the particular arrangements shown in FIGs. 4A-4C are simply representative, and other arrangements should be apparent to one skilled in the art.

FIG. 5D (*see* Exhibit A) shows an embodiment of a crater structure for the dimples 17. In such an embodiment, the crater has a center that is indented slightly into the face of the card, and a lip that is raised slightly above the face of the card. Such craters disposed on the face of the card enhance the ability of a user to grip and remove the card from wallets, carrying cases, and the like.

VI. ISSUES

In the rejection dated July 2, 2003, the Examiner cited PCT Publication WO 93/11510 ("the '510 reference") (Exhibit B) as anticipating, under 35 U.S.C. § 102(b), claim 24, the only pending independent claim. The Examiner asserts that the '510 reference discloses all of the subject matter set forth in claim 24, and anticipates or renders unpatentable the dependant claims. Thus, the issue presented is whether the present invention is anticipated by or unpatentable in view of the '510 reference.

VII. GROUPING OF CLAIMS

Appellant respectfully submits that all claims contain patentable subject matter, and that no claim should fail for anticipation under 35 U.S.C. § 102(b) or obviousness under 35 U.S.C. § 103. Claims 24-33 stand or fall together.

VIII. ARGUMENT

A. The '510 Reference Does Not Anticipate Claim 24.

The present invention is directed to solving the problems associated with gripping a card, such as a credit card, to remove it from a wallet, carrying case, and the like. The present invention is directed to a credit-card-sized card with a plurality of craters disposed on a face of the card. Each crater has a center indented slightly into the face of the card, and a lip raised slightly above the face of the card. This arrangement increases the gripability of the card.

The Examiner has rejected claims 24, 25, and 27 as anticipated under 35 U.S.C. § 102(b) by the '510 reference. The Examiner has further rejected claims 26, and 29-

33 under 35 U.S.C. § 103 as being unpatentable over the '510 reference. The Examiner has further rejected claim 28 as unpatentable under 35 U.S.C. § 103 over the '510 reference and U.S. Patent No. 4,443,027 to McNeely *et al.* ("the McNeely patent"). However, as noted above, all claims stand or fall together, and thus this brief will address only the rejection of independent claim 24 based on the '510 reference.

In order for a reference to anticipate a claim, each and every element of the claim must be found in the prior art reference. *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). At least because the '510 reference fails to teach a crater as claimed, appellant respectfully submits that the '510 reference does not anticipate claim 24.

The Examiner contends that the '510 reference anticipates claim 24 because it teaches "a tread (14) having a lip and crater; and a magnetic stripe." In general, the '510 reference, which was first made of record in this application in a Form PTO 1449 submitted October 23, 2000, discloses a card with a coded pattern of projections and/or recesses extending out of the plane of the card and substantially parallel to the normal direction of insertion of the card. *See* Exhibit B at page 1, lines 23-26 and FIG. 1A. The purpose of these projections and recesses is to provide security by ensuring that the card can only be used with readers that match the profile of the card. It appears that these cards would typically be used as "keys" for door locks in hotels and the like. *See* Exhibit B at page 1, lines 17-18. The Examiner specifically points to feature 14 of the '510 reference which includes a "peak and notch" extending along the length of the card as teaching a "crater." *See* Exhibit B at page 2, lines 26-28 and FIGs. 1A-B.

Appellant respectfully contends that the Examiner's anticipation rejection is unfounded. Claim 24 requires a "plurality of craters . . . comprising a lip and a center, wherein the lip of each crater is raised slightly above [the face of the card] and the center of each crater is indented slightly into [the face of the card]." Thus, claim 24 does not require simply any structure that has a raised and indented portion, but rather a "crater" with a "lip" and a "center." The plain claim language and the common understanding of the term "crater" make clear that claim 24 requires a structure wherein an indented portion is surrounded by a "lip" portion, that is, a structure resembling a crater. This understanding of the term "crater" is further supported by the specification of the patent application, which states: "In yet another alternative embodiment . . ., the dimples are created in such a manner as to create individual craters in which the lip of the crater is raised slightly above the surface of the card, while the center of the crater is slightly below the surface of the card." *See* Exhibit A at Page 9 and FIGs. 4A-C, 5D. The '510 reference does not disclose any "crater" structure, but simply a card wherein a lengthwise ridge has both a projected portion and a recessed portion. Thus, because the '510 reference does not disclose each and every element of claim 24, appellant respectfully requests that the Examiner's anticipation rejection be reversed.

B. The '510 Reference Does Not Render Claim 24 Unpatentable Under 35 U.S.C. § 103.

While the Examiner did not apply a rejection to claim 24 under 35 U.S.C. § 103 based on the '510 reference, appellant respectfully submits that such a rejection would also be unfounded. As described above, the '510 reference is directed to a card with projections and/or recesses along the length of the card in order to ensure that the card can only be used with readers that match the profile of the card. Thus, unlike the claimed invention, the purpose of these projections/recesses has nothing to do with enhancing the

gripability of the card. Moreover, if the '510 reference was modified to provide craters as claimed, it would not likely work for its intended purpose, because cards according to the '510 reference must have a consistent profile in order to be slid into a reader. Thus, there would be no suggestion or motivation to modify the '510 reference to provide the craters as claimed.

Similarly, there would be no motivation to combine the '510 reference with other art, such as the previously cited Rinderknecht patent (U.S. Patent No. 5,096,228; Exhibit C). The Rinderknecht patent generally discloses an identification card with a non-slip engaging means that is a notch or impression in the card. *See* Exhibit C at col. 4, lines 18-24. Once again, the purpose of the projections/recesses in the '510 reference is completely different from the purpose of the non-slip engaging means in Rinderknecht, and thus, there would be no suggestion or motivation to combine these two references.

Thus, appellant respectfully submits that a rejection of claim 24 under 35 U.S.C. § 103 would also be unfounded.

Finally, appellant understands that the Examiner has withdrawn the rejections made in the Office Action dated May 21, 2002, and specifically those related to the Rinderknecht patent and the Theken patent (U.S. Patent No. 5,556,092), and that the only issue presented in this appeal is that recited in Section VI (Issues), *supra*. Nevertheless, appellant maintains that those rejections were also unfounded as fully discussed in the initial Brief on Appeal filed on November 19, 2002, and hereby incorporate by reference Section VIII (Argument) of that brief.

CONCLUSION

Independent claim 24 recites a card having a plurality of craters disposed on a face of the card, with each crater having a center indented slightly into the face of the card, and a lip raised slightly above the face of the card. The subject matter of independent claim 24 should be allowable over the '510 reference for at least the reasons discussed above in Sections A and B. In view of the above discussion, appellant respectfully urges that the rejection of claim 24-33 as unpatentable under 35 U.S.C. §§ 102(b) or 103 is improper. Reversal of the rejections in this appeal is respectfully requested.

Dated: September 30, 2003

Respectfully submitted,

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APPEAL BRIEF APPENDIX

24. A credit-card-sized card comprising: a first face, a second face, and a tread comprising a plurality of craters disposed on one of said first and second faces, each of said plurality of craters comprising: a lip and a center, and wherein the lip of each crater is raised slightly above said one face, and the center of each crater is indented slightly into said one face.

25. A card as in claim 24, further comprising a magnetic stripe.

26. A card as in claim 25, wherein the magnetic stripe has approximate dimensions of 12 to 16 mm in width and 82 mm in length, and is located on a back of the card approximately 5 mm from and parallel to a lengthwise edge of said card.

27. A card as in claim 26, wherein the tread avoids interference with the readability of information encoded on the magnetic stripe.

28. A card as in claim 24, further comprising a computer chip embedded in said card for the storage of digital information.

29. A card as in claim 24, wherein said tread is arranged near an edge of said card.

30. A card as in claim 24, wherein said plurality of craters are arranged in at least one triangular pattern.

31. A card as in claim 29, wherein said plurality of craters are arranged in at least one triangular pattern.

32. A card as in claim 24, wherein said tread is formed on a front of said card.

33. A card as in claim 24, wherein said tread is formed on a back of said card.

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. Patent Application No. 09/095,752, filed December 30, 1997, the entirety of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

This invention relates to credit cards and other types of cards typically stored in a wallet or a carrying case. More particularly, this invention relates to increasing ability of a user to grip such a card, especially when the card includes a magnetic stripe or other means of storing encoded information.

DESCRIPTION OF THE RELEVANT ART

Cards of various kinds have become ubiquitous in modern society. people often carry a number of cards in their wallet or carrying case, including credit cards, ATM or bank cards, debit cards, "smart" cards, insurance cards, a driver's license, identification cards, telephone calling cards, transit cards, library cards, and card-entry hotel keys. An increasing number of consumer transactions require the use of these cards, for example as the form of payment or as identification necessary for another form of payment or admission. Quick and accurate access to individual cards is useful and desirable for both the consumer and the vendor of goods or services.

For the consumer, typically, credit cards and other types of cards are placed in a wallet or carrying case. To perform their function properly, card wallets and carrying cases are frequently equipped with sleeves or slots for holding one or more cards in an arrangement selected by the user. In order to hold cards snugly, these sleeves are often designed to provide

very little space for the card. Moreover, with a limited number of separate storage sleeves in their wallet or carrying case, many people find it necessary to store two, three or more cards in a single sleeve.

The result is that the cards are often held tightly within each sleeve, and several factors may contribute to making it difficult to remove a particular desired card from the sleeve. For example, if a consumer needs to remove a card sandwiched between two other cards in a single sleeve, there may be little surface with which to grip an individual card. In addition, the surface of many cards, such as credit cards and ATM cards, is smooth, making it difficult to grip. Consumers with large fingers, or elderly consumers or others with reduced dexterity, may thus encounter special difficulties in extricating a particular card from a wallet or carrying case. Difficulty in removing a single selected card increases the time necessary for the transaction, causes stored cards to be frequently reshuffled and potentially disorganized, and increases the likelihood that cards will be dropped or lost.

Vendors also have an interest in the ease of card removal. For a vendor, an important object of a transaction is to receive the correct card from the consumer, collect the necessary information - for example by reading the encoded information on the card's magnetic stripe - and return the card promptly. A consumer's difficulty in removing a card from a wallet or carrying case may increase transaction time, which may lead in turn to longer lines and increased waiting time for other consumers, or the need for additional personnel to serve customers in a prompt manner.

Finally, card issuers such as banks and credit card companies have an interest in a card that can be selected accurately by the consumer and read accurately by electronic readers. A

card issuer typically earns revenue when a consumer uses the issuer's card. If a card cannot be properly retrieved, the consumer may choose to use a different card, thus depriving the transaction to the issuer of the card initially sought by the consumer.

The need for quick and accurate access to a card is not diminished by the presence of a magnetic stripe on the card. Typically, such magnetic stripes are placed on the back side of the card, and usually contain encoded information that electronic readers can read to perform a function or confirm identification. For example, on credit and debit cards, the magnetic stripe on the back of the card is usually encoded with specific account information such as the credit card number, the cardholder's name, the card expiration date, and a personal identification code. Interference with the operation of the magnetic stripe could render the stripe useless or could otherwise cause the card to fail.

Proper functioning of the magnetic stripe is very important. If the electronic device for reading the encoded information cannot operate properly, the vendor must enter the information manually, using a keypad, telephone or other similar device. Manually entering the encoded information adds both indirect and direct costs to the vendor. For example, the additional time necessary to enter the information manually may increase needs for register operators and decrease the vendor's ability to attend to other customer service matters. In addition, vendors are frequently charged increased transaction fees by the card issuer for a manually entered transaction.

In order to ensure interoperability between the magnetic stripe readers and cards bearing magnetic stripes, the parameters defining the magnetic stripe are governed by the International Organization for Standardization (ISO) and the International Electrotechnical

Commission (IEC). The ISO/IEC 7811 provides standards for the physical characteristics of the magnetic stripe including the location of the stripe on the card, the surface profile of the stripe, and the height of the stripe above the card surface.

While less common today than magnetic stripe cards, smart cards are also gaining popularity with consumers. Smart cards contain an embedded computer chip containing digitally encoded information. The proper functioning of the embedded computer chip, like the proper functioning of the magnetic stripe, is essential for commercial transactions.

United States Patent No. 5,096,228 issued to Rinderknecht, entitled "Notched I.D. Card," suggests an early approach for improving the ability of a user to grip a card. Rinderknecht teaches the use of substantial notch or hole in the card. This solution, however, has a number of short-comings. Most importantly, a notch in the card as disclosed in Rinderknecht can interfere with the proper functioning of the magnetic stripe typically found on credit cards and other cards in use today and with the proper functioning of the computer chip in smart cards.

SUMMARY OF THE INVENTION

An object of the invention is to improve the ability of a user to grip - that is, to improve gripability - of credit-card-sized cards often stored in a wallet or carrying case. A further object of the invention is to increase the gripability of credit - card-sized cards that include a magnetic stripe or other means for encoding information without interfering with the intended operability of the magnetic stripe or other means of encoding information.

Another object of the invention is to use either raised or indented dimples, or a combination of raised and indented dimples, on the front side, on the back side, or both sides of the card, to increase the gripability of the card.

The present invention, as broadly described herein, provides a credit-card-sized card with a front, a back, edges, and a means for improving the gripability of the card. In one embodiment the means for improving gripability comprises dimples arranged in a variety of locations along the top of the front side of the card. In another embodiment, the dimples are arranged near the top of the front side of the card and also on the sides of the front of the card. In yet another embodiment, dimples are arranged on the front side of the card near all four edges. In each of these preferred embodiments, the numerous dimples may be grouped in close proximity, and arranged into treads or otherwise arranged to improve the gripability of the card.

Additional objects and advantages of the invention are set forth in part in the description which follows, and in part are obvious from the description, or may be learned by practice of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute part of the specification, illustrate preferred embodiments of the invention, and together with the description, serve to explain the principles of the invention.

FIG. 1 is an illustration of the prior art wherein a wallet or carrying case holds a number of credit-card-sized cards.

FIG. 2 is an illustration of the invention wherein each credit-card-sized card in a card wallet includes a means for improving the gripability of the card.

FIGs. 3A and 3B illustrate the parameters for the magnetic stripe on a credit-card-sized card; specifically, FIG. 3A and FIG. 3B show the location on the back of a card that is reserved for the magnetic stripe.

FIGs. 4A-4C illustrate three preferred embodiments of the present invention, having a means for improving the gripability of the card in various locations near the edge of the card.

FIG. 5A is a partial sectional view of a card taken through the means to improve gripability, where the means includes dimples indented from the surface of the card. FIG. 5B is a partial sectional view of a card taken through the means to improve gripability where the means includes dimples raised from the surface of the card. FIG. 5C is a partial sectional view of a card taken through the means to improve gripability where the means includes embossed dimples raised from the front surface of the card and indented into the back surface of the card. FIG. 5D is a partial sectional view of a card taken through the means to improve gripability where the means includes crater-type dimples, which are both raised and indented from the surface of the card.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to the present preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings, wherein like reference numerals indicate like elements throughout the several views.

FIG. 1 illustrates the state of the prior art. Typically, a user carries numerous credit-card-sized cards 12 in a wallet 10 or carrying case (not depicted). The wallet 10 or carrying case often contains numerous sleeves 11 in which a consumer can place one or more cards 12. Because it is often necessary or desirable to carry a large number of cards 12, the cards 12 may often be tightly packed within the wallet 10 or carrying case. The wallet 10 or carrying case often has a limited number of sleeves 11, making it frequently necessary to place more than

one card 12 in a single sleeve 11. This frequently packs the cards 12 tightly within the wallet 10 or carrying case.

Because the cards 12 may be packed tightly, it is often difficult to remove a specific card. Typically, it is necessary for the user to wedge her forefinger behind the card 12 while applying pressure with her thumb 14 to the front of the card 12. This wedging may cause unnecessary bending of the card which can interfere with the operation of the card 12 in a reader or other device. If the card 12 has a smooth plastic surface, for example, or if the user is wearing gloves or if her hands are slippery as other examples, withdrawing the card 12 from the wallet 10 may be even more difficult.

FIG 2. depicts a preferred embodiment of the present invention, including a credit-card-sized card 32, including a front 20, a back (not depicted), top edge 22, side edges 23, bottom edge 24, and a means for improving the gripability of the card. While the specific embodiments illustrated are cards having magnetic stripes, e.g. credit cards, debit cards or bank cards, this is by way of example, and the invention is not limited to these types of cards.

In the preferred embodiment depicted in FIG. 2, the credit-card-sized card 32 has a length of approximately 86 mm, a width of approximately 54 mm, and a thickness of approximately I mm., in conformance with industry standards. In other embodiments, credit-card-sized card 32 has dimensions depending on the nature and use of the card, as known in the art.

In a preferred embodiment depicted in FIG. 2, the means for increasing the gripability of the card is a tread 16 made up of a plurality of individual dimples 17 arranged near top edge 22 of the card 32. The removal of a single card 32 from wallet merely requires the user

to slide her thumb 34 along the face of the card 32 across the tread 16 in a direction toward the top edge 22 of card 32. This motion causes the card 32 to slide out of the sleeve 31 due to the increased friction between the thumb 34 and the card 32. As depicted, the forefinger 35 may no longer be needed for the removal of the card 32 from the sleeve 31. In an embodiment (not depicted) in which the tread 16 is located on the back of the card 32, the thumb may no longer be needed for the removal of the card 32 from the sleeve 31. In an embodiment (not depicted) in which treads 16 are located on both the front 20 and the back of the card 32, the thumb and forefinger can be used in combination.

In a preferred embodiment depicted in FIG. 2, the card 32 includes a plurality of treads 16, each located on the front 20 of the card 32 near the top edge 22. In this embodiment, the treads 16 are exposed while the card 32 is stored in sleeve 31. In another embodiment (not depicted), the treads can be located near the side edges 23 of the card; this would be useful for wallets 30 or carrying cases that store cards in an alternative orientation such that the side edge of the card is exposed stored in the wallet or carrying case. Alternate locations of the treads may depend on the expected storage arrangements of individual cards, and should be apparent to one of skill in the art from this description or from practice of the invention.

As depicted in FIG. 2, dimples 17 can be located anywhere on the card 32 but should not interfere with the readability of any information on the magnetic stripe or otherwise on the card. In a preferred embodiment, depicted in FIG. 2, the dimples 17 are located outside the area occupied by the magnetic stripe. As provided in ISO/IEC 7811, for example, the boundaries reserved for the magnetic stripe depend on how encoded information is stored on the stripe. FIG. 3A depicts a preferred location of a magnetic stripe for cards with two tracks of

information. FIG. 3B, with a slightly wider magnetic stripe, shows a preferred location of the magnetic stripe 30 for cards with three tracks of information.

FIGs. 4A-4C depict three alternate preferred embodiments of the present invention. In each, a number of dimples 17 are arranged collectively to form a plurality of treads 16. In the preferred embodiment depicted in FIG. 4A, the dimples 17 are arranged to form treads 16 either in a triangular pattern or in a line. The dimples 17, however, can also be arranged in any number of patterns. As depicted in FIGs. 4A-4C, the treads 16 are located near an edge of the card 32, and in each preferred embodiment depicted in FIGs. 4A-4C, a tread 16 is located near the top edge 22 of the card 32. Other arrangements of dimples 17 forming treads 16 should be apparent to one of skill in the art from this description or from practice; of the invention, again depending on the intended or experienced use of the card.

FIGs. 5A-5C show sectional views of preferred embodiments of a credit-card-sized card 32 of the present invention taken along the line X-X of FIG. 4A. In FIG. 5A, the dimples 17 are indented from the front 20 of the card; in FIG. 5B the dimples 17 are raised from the front 20 of the card. In the raised dimple embodiment depicted in FIG. 5B, the height of each dimple 17 should be selected so as to not interfere with the proper operation of magnetic stripe electronic readers or other devices that require the card to be swiped by or through the reader or device. In an alternative preferred embodiment depicted in FIG. 5C, the dimples 17 are embossed such that they are raised on the front 20 of the card and indented on the back 21 of the card. In yet another alternative embodiment depicted in FIG. 5D, the dimples are created in such a manner as to create individual craters in which the lip of the crater is raised slightly above the surface of the card, while the center of the crater is slightly below the surface of the card.

Similarly, the height of dimples 17 should not exceed the height of any other embossed or raised characters or icons on the face of the card 32, so that the dimples 17 do not interfere with devices designed to imprint the raised characters or icons on receipts or other paper or similar documents. Depending on the intended or expected use of the credit-card-sized card of the present invention, the height of any dimples or other means for improving the gripability above the surface of the card should be apparent to one of skill in the art, from this description or from practice of the invention so that such dimples do not interfere with readers, imprinters or other devices designed to be used with the card.

It will be apparent to those skilled in the art that various modifications may be made to this invention and that other embodiments of the invention may be made based on this disclosure. To the extent that such other embodiments are created, it is intended that they shall fall within the protection provided by the appended claims and their equivalents.

We claim:

1. A credit-card-sized card comprising a front, a back, and a tread comprising a plurality of raised dimples for improving the gripability of said card.

2. A card as in claim 1, further comprising a magnetic stripe.

3. A card as in claim 2, wherein the magnetic stripe has approximate dimensions of 12 to 16 mm in width and 82 mm in length, and is located on the back of the card approximately 5 mm from and parallel to a lengthwise edge of said card.

4. A card as in claim 3, wherein the tread avoids interference with the readability of information encoded on the magnetic stripe.

5. A card as in claim 1, further comprising a computer chip embedded in said card for the storage of digital information.

6. A card as in claim 1, wherein said tread is formed on the front of said card.

7. A card as in claim 6, wherein said tread is arranged near an edge of said card.

8. A card as in claim 1, wherein said tread comprises dimples arranged in at least one triangular pattern.

9. A card as in claim 7, wherein said tread comprises dimples arranged in at least one triangular pattern.

10. A card as in claim 1, wherein said tread is formed on the back of said card.

11. A card as in claim 10, wherein said tread is arranged near an edge of said card.

12. A card as in claim 11, wherein said tread comprises dimples arranged in at least one triangular pattern.

13. A card as in claim 10, wherein said tread comprises dimples arranged in at least one triangular pattern.

ABSTRACT

The invention disclosed herein represents a means for increasing the gripability of a credit-card-sized card. Specifically, dimples raised from, indented in, or embossed in a credit-card-sized card are arranged to from a tread on the front or back of a card. This tread allows fingers to more easily grip a credit-card-sized card for ease of handling or removal from a wallet or carrying case. Moreover, the means disclosed does not interfere with various means such as magnetic stripes commonly used to store encoded information on credit-card-sized cards.

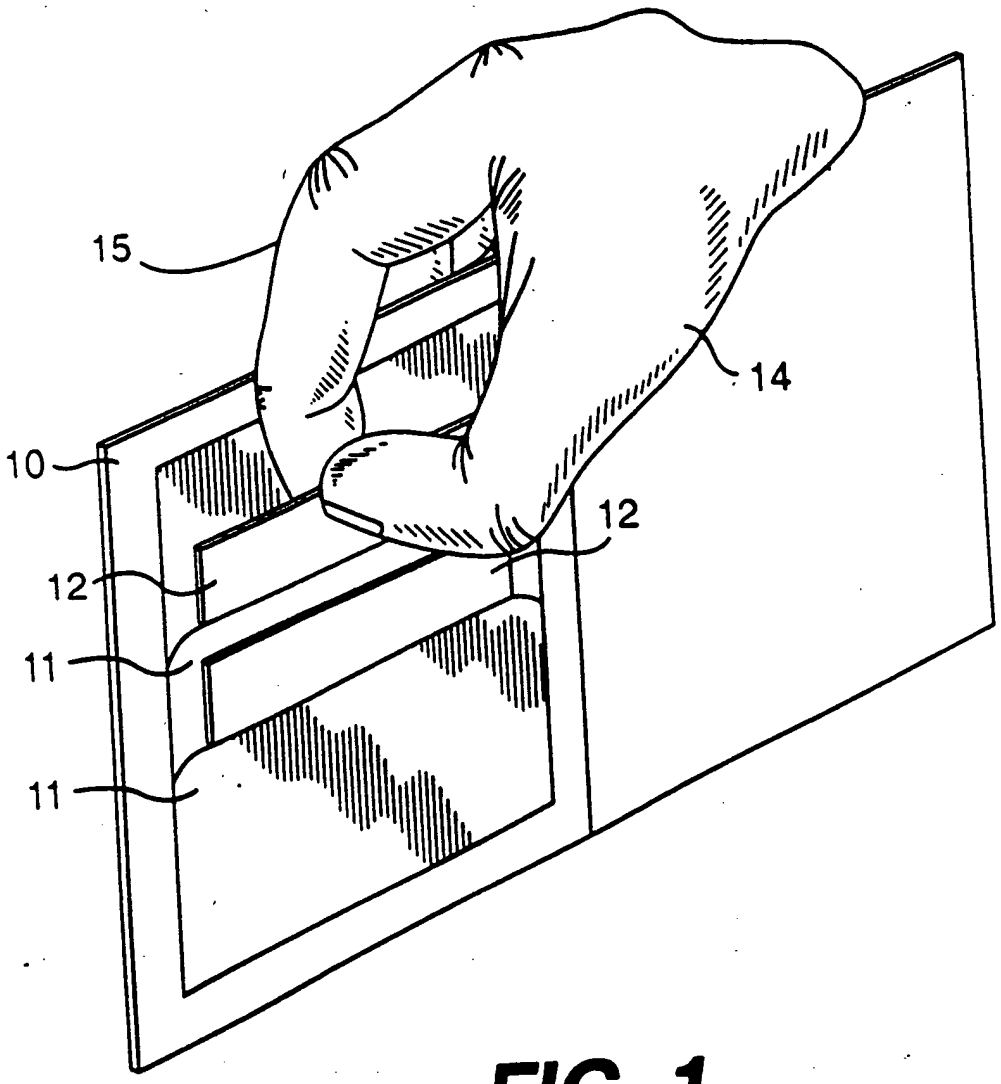

FIG. 1

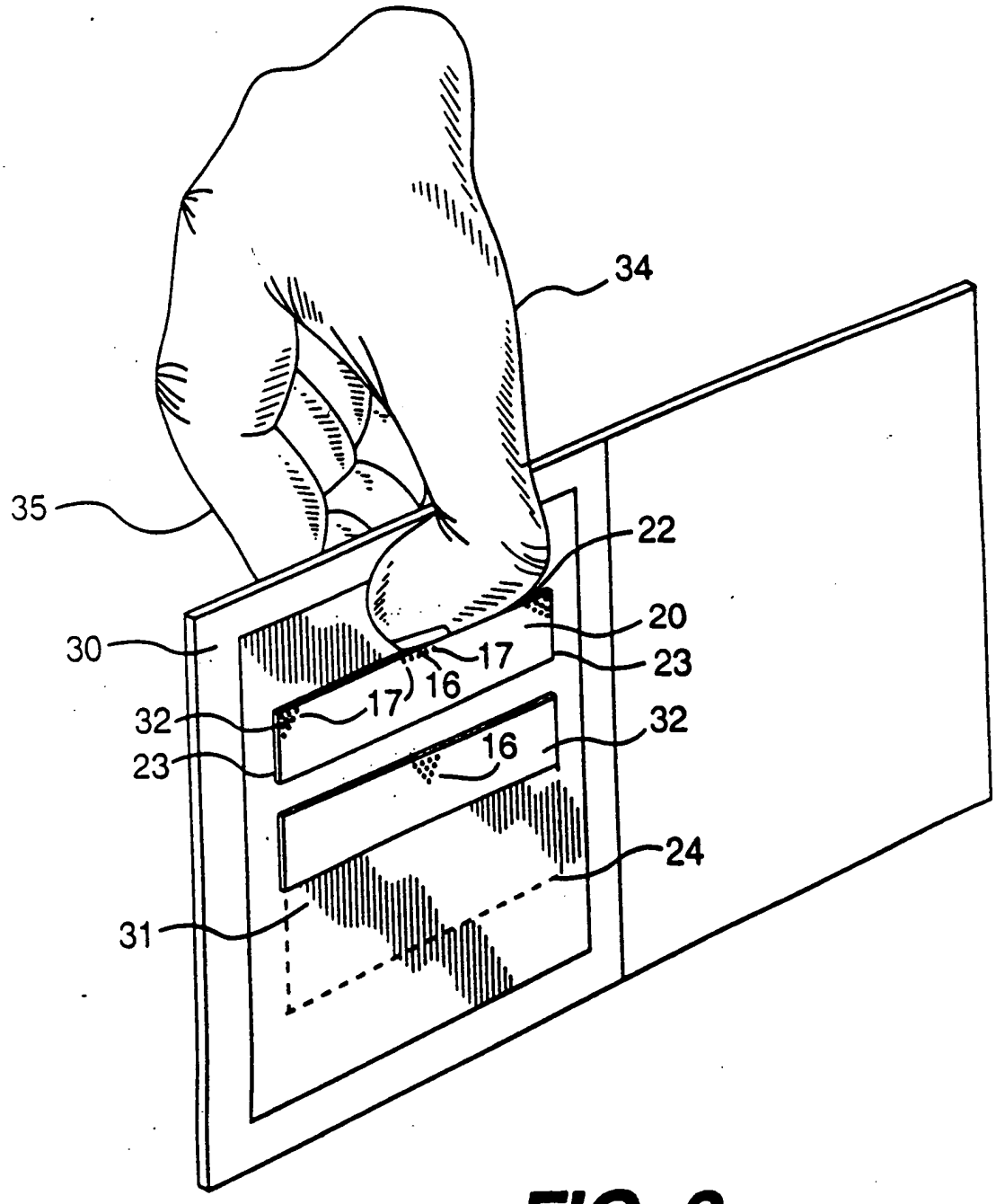

FIG. 2

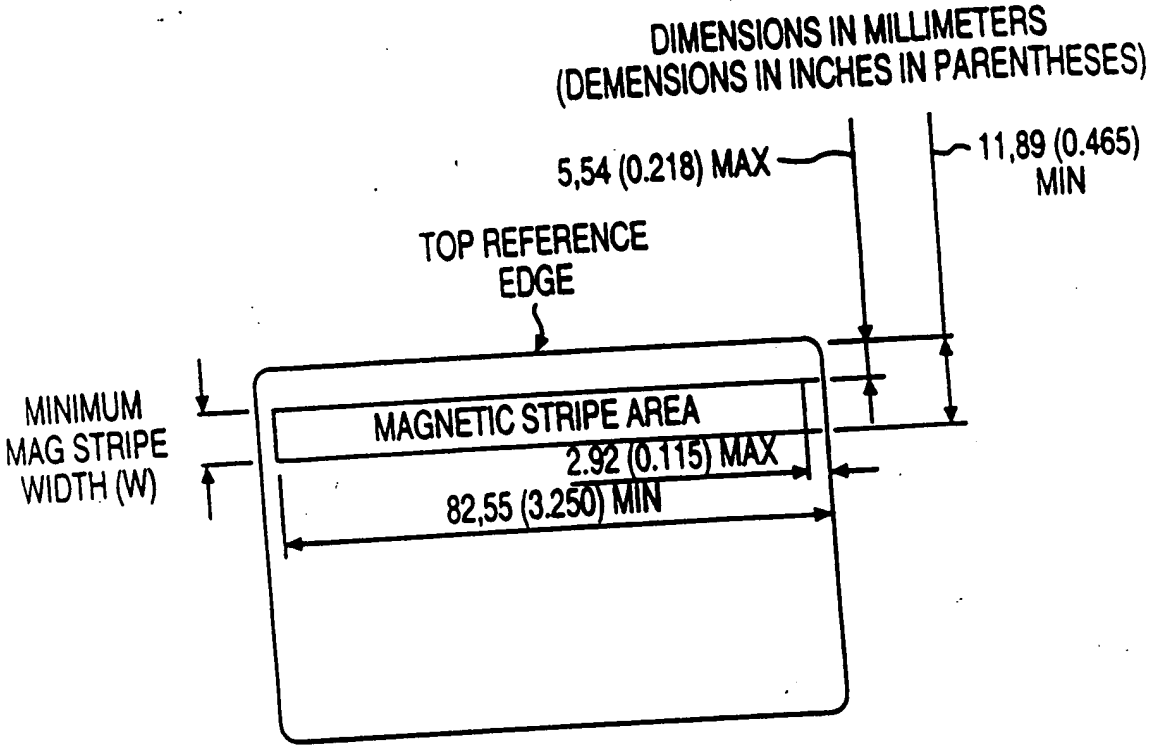
DIMENSIONS IN MILLIMETERS
(DEMENSIONS IN INCHES IN PARENTHESES)
5,54 (0.218) MAX
11,89 (0.465)
MIN
TOP REFERENCE
EDGE
MINIMUM
MAG STRIPE
WIDTH (W)
MAGNETIC STRIPE AREA
2.92 (0.115) MAX
82,55 (3.250) MIN

FIG. 3A

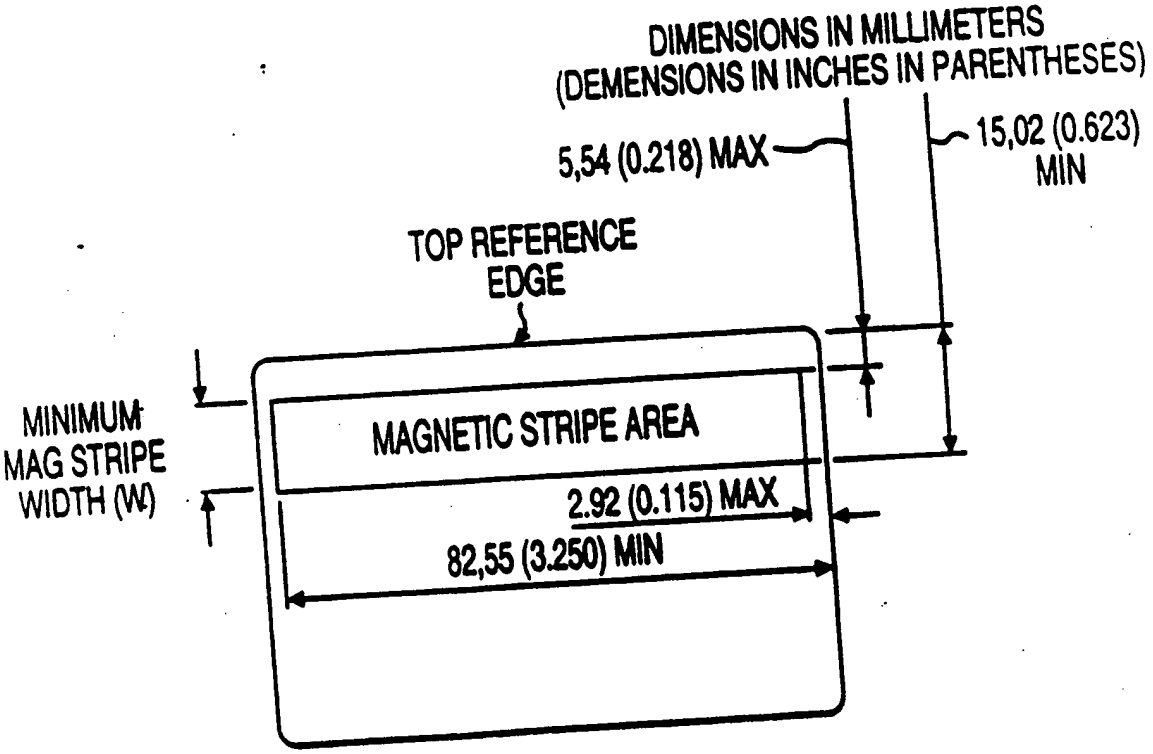
DIMENSIONS IN MILLIMETERS
(DEMENSIONS IN INCHES IN PARENTHESES)
5,54 (0.218) MAX
15,02 (0.623)
MIN
TOP REFERENCE
EDGE
MINIMUM
MAG STRIPE
WIDTH (W)
MAGNETIC STRIPE AREA
2.92 (0.115) MAX
82,55 (3.250) MIN

FIG. 3B

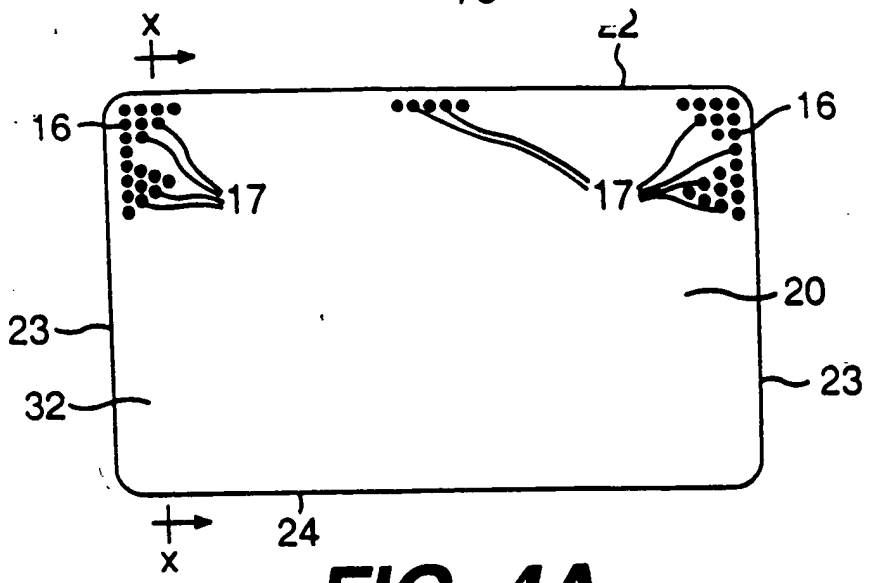

FIG. 4A

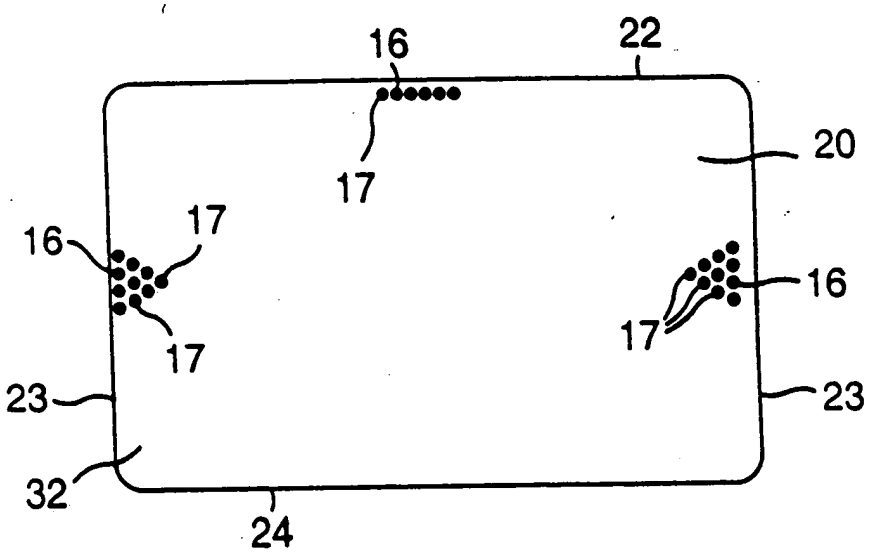

FIG. 4B

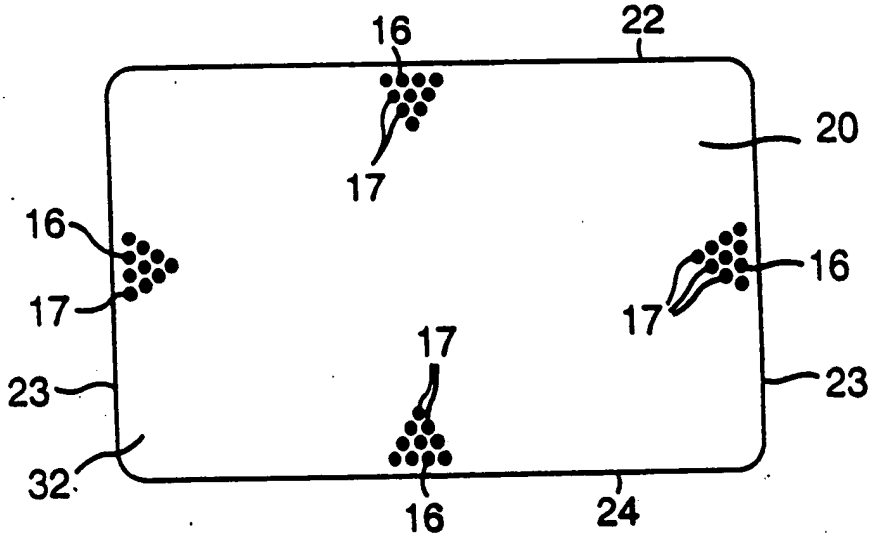

FIG. 4C

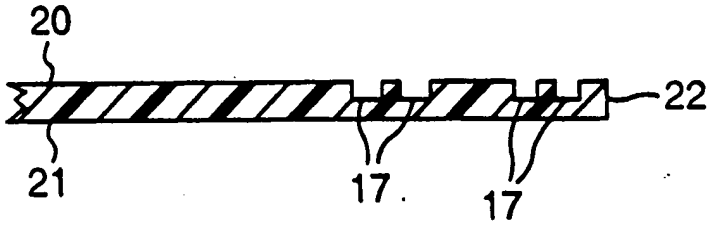

FIG. 5A

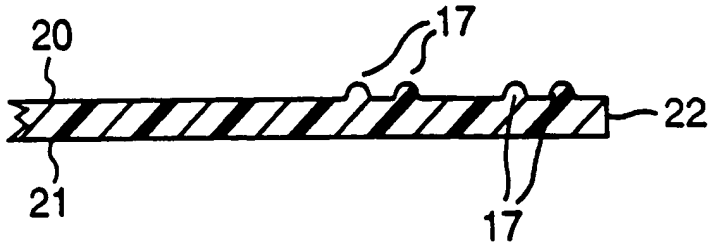

FIG. 5B

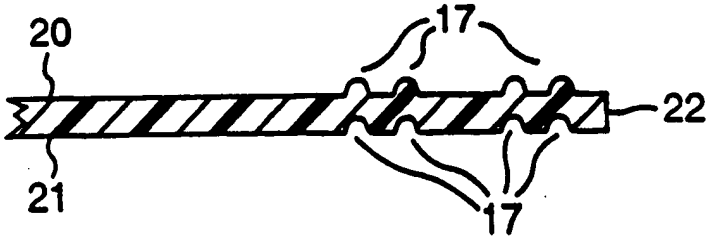

FIG. 5C

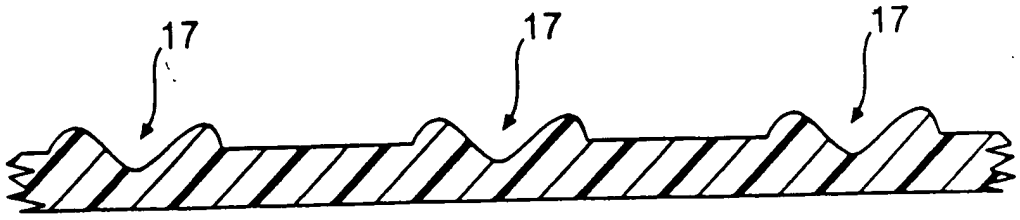

FIG. 5D

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Published
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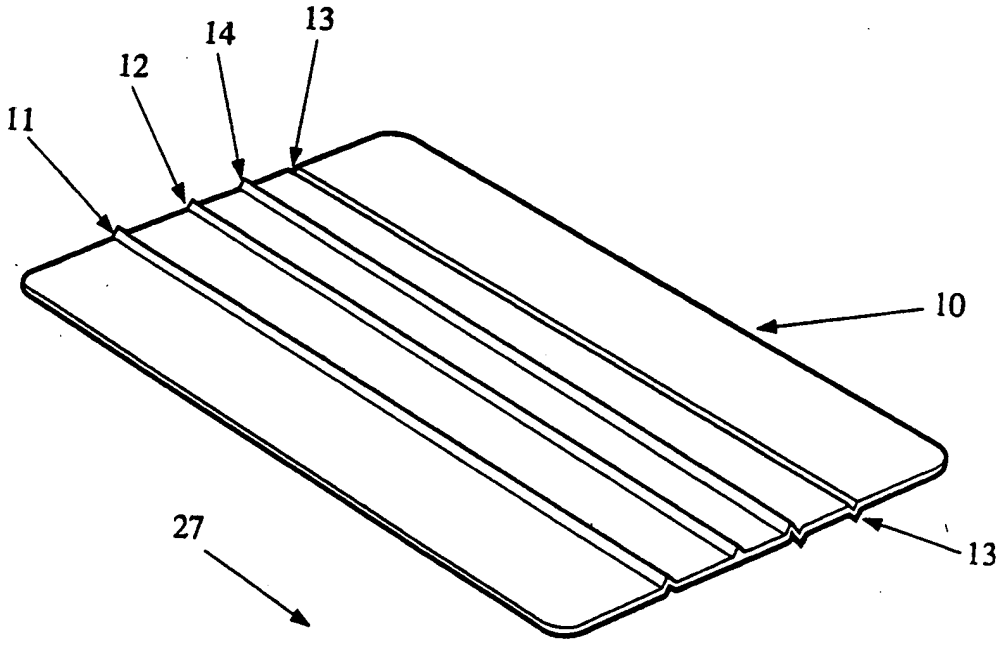
(54) Title: PROFILED CARD SECURITY SYSTEM



(57) Abstract

The invention relates to a card (10), such as an access or credit card, with a coded pattern of projections and/or recesses (13, 14) extending out of the plane of the card (10) which can be inserted into a lock. Any suitable receipt means, such as a shaped insertion plate (20) may be used to preclude initial entry of any card (10) not having the necessary profile, the card otherwise operating normally.

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PROFILED CARD SECURITY SYSTEM

Technical Field

The present invention relates to access cards, particularly plastic cards, such as credit cards, automatic bank machine cards, and similar cards used as access devices.

Background Art

Various card-based systems are in widespread use as door locks, car park access controls, automatic teller machine and funds transfer devices, and the like. In many of these applications, standard sized plastic cards incorporating magnetic stripes are used. Mechanical card based systems have also been proposed in co-pending PCT/AU92/00577 by the present applicant, which utilise similar plastic cards .

In all of these applications, there are situations where a "restricted card" system is desirable, so that unique cards may be issued to a particular organisation. The options within the coding system (eg for magnetic swipe cards) are limited, and it is difficult to reserve whole coding sequences for single users. Examples of the application of such systems include hotels, defence facilities and building access.

It is an object of the present invention to provide a system for card restriction which is inexpensive, effective and does not interfere unduly with the basic coding features of the cards.

Summary of the Invention

According to one aspect, the present invention comprises an improved card security system, comprising a card including a coded pattern of projections and/or recesses extending out of the plane of the card and substantially parallel to the normal direction of insertion of the card;

and receipt means for said card adapted to receive only cards having a specific cross-section including said coded pattern of projections and/or recesses, in the direction of normal insertion.

According to another aspect, the present invention provides a card for accessing a secure system, comprising a first coded magnetic and /or mechanical sequence, and a second coded pattern of projections and/or

recesses extending out of the plane of the card and substantially parallel to the normal direction of insertion of the card.

Preferably the card includes a programmable magnetic strip of conventional type. Most preferably the card includes further a pattern of slots extending through the plane of the card.

Brief Description of Drawings

The invention will now be described in more detail with reference to the accompanying figures, in which:

Figure 1A illustrates a perspective view of the inventive card according to a first embodiment;

Figure 1B illustrates a section across the card of figure 1A;

Figure 2 illustrates a perspective view of a second embodiment of the invention; and

Figure 3 illustrates a receipt means for the card .

Detailed Description

Referring to figure 1, an illustrative card 10 includes a variety of surface features parallel to the normal insertion direction 20 for the lock or other receiving device. These features may be a "corrugation", and extend to both sides of the card as in features 11, 13 and 14, or be merely on one side, as in 12. The projections may be of any or various shapes, including square, hemispherical, triangular - further, all may be the same shape or same combination of shapes for a particular card. It will be appreciated that the projections must be formed in such a way as to retain sufficient mechanical strength - for instance, very deep recesses with no corresponding projection on the other side are undesirable.

- An advantageous type of projection is shown as feature 14, and involves a peak and notch in each direction of approximately one half the card thickness. This allows maximum detectable travel for the receipt means while minimising the thickness of the card. it is also very difficult for a would-be thief to duplicate.

In the reading device, any suitable receipt means - for instance, a suitably shaped insertion plate as shown in figure 3 - may be used to preclude

entry of any card not having the necessary profile, or to not actuate unless grooves or peaks are present. Any suitable mechanical device may be used. For example, a biased cam may be actuated by appropriate projections at some position corresponding to the insertion of a suitable card.

It will be appreciated that the cards may be produced by any suitable means from any suitable material - although for reasons of practicality a plastics material is preferred. Cards according to the invention may be produced by extrusion, injection moulding, or other suitable techniques. Magnetic stripes, recesses or projections for mechanical card locks, security devices such as holograms, and embossed card holder details may be included in cards according to the present invention. The projecting features may be confined to one or more zones to facilitate this. Figure 2 illustrates a card with all three types of coding - magnetic, slots and a profile.

Any suitable technique may be used to cut slots or emboss card holder details as is common practice, with care taken to not damage the card due to its non-planar surface.

One particular point which must be noted is that the cross-sectional feature must be arranged so as to not unduly weaken the structural integrity of the card.

It will be appreciated that variations and additions are possible within the spirit and scope of the invention.

CLAIMS

1. An improved card security system, comprising a card including a coded pattern of projections and/or recesses extending out of the plane of the card and substantially parallel to the normal direction of insertion of the card;

and receipt means for said card adapted to receive only cards having a specific cross-section, including said coded pattern of projections and/or recesses, in the direction of normal insertion.

2. A system according to claim 1, wherein the card further includes a coded magnetic portion, and the receipt means is adapted to read the magnetic portion.

3. A card for accessing a secure system, comprising a first coded magnetic and/or mechanical sequence, and a second coded pattern of projections and/or recesses extending out of the plane of the card and substantially parallel to the normal direction of insertion of the card.

4. A card according to claim 3, including a programmable magnetic strip of conventional type.

5. A card according to claim 3 or claim 4, including a pattern of slots extending through the plane of the card.

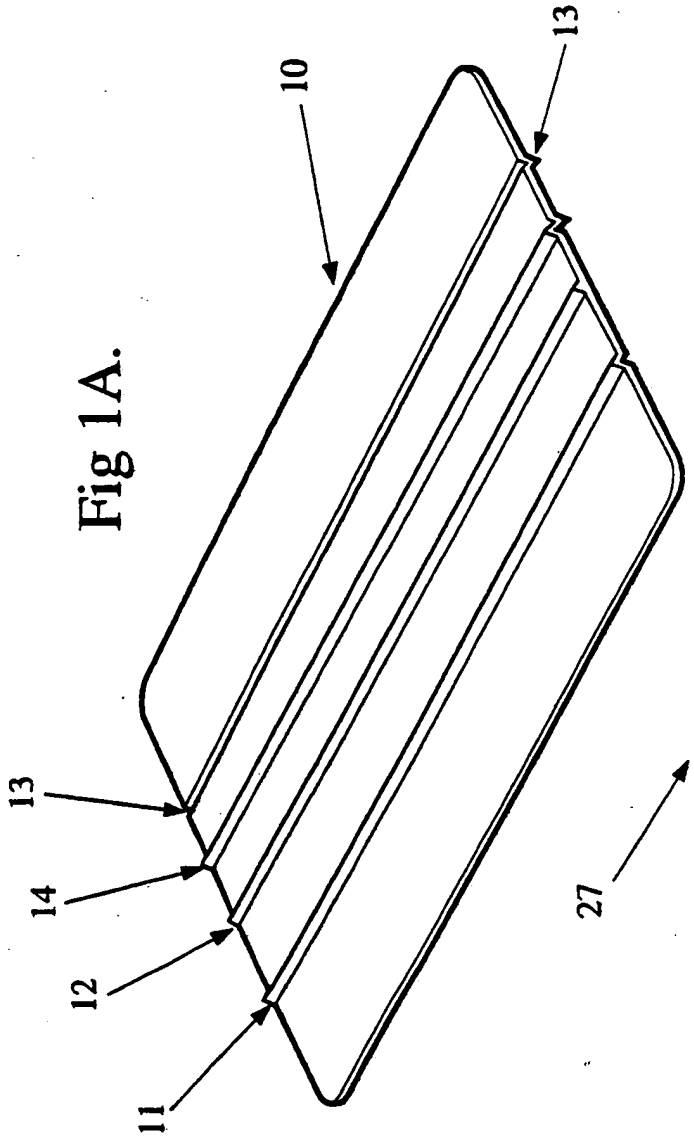

Fig 1A.

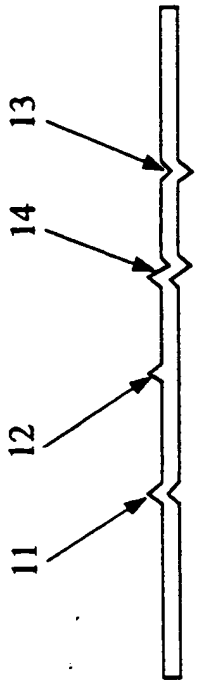

Fig 1B.

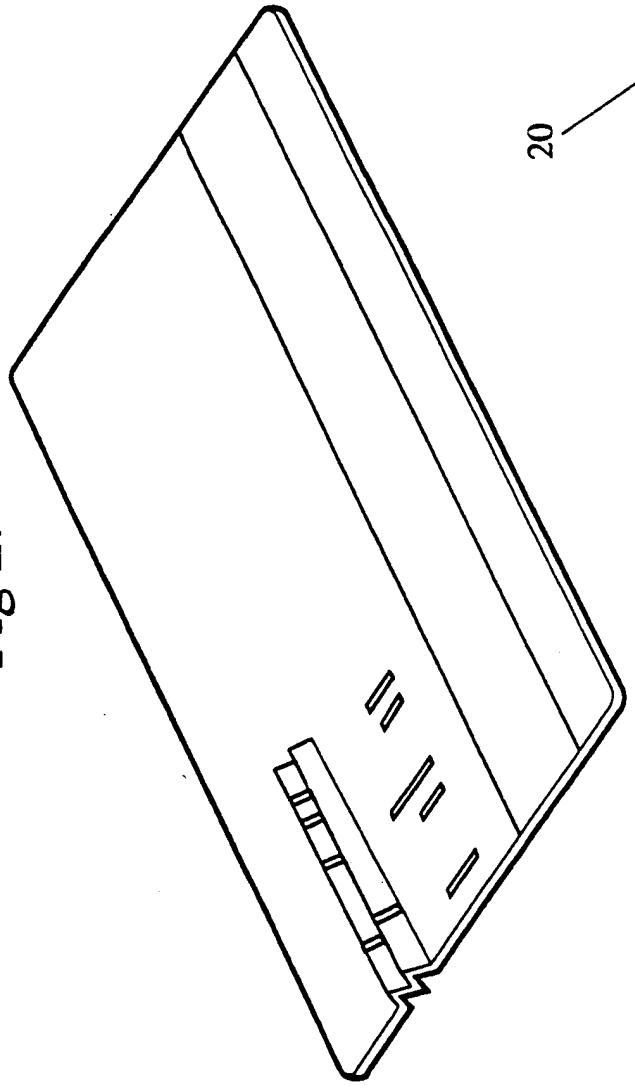

Fig 2.

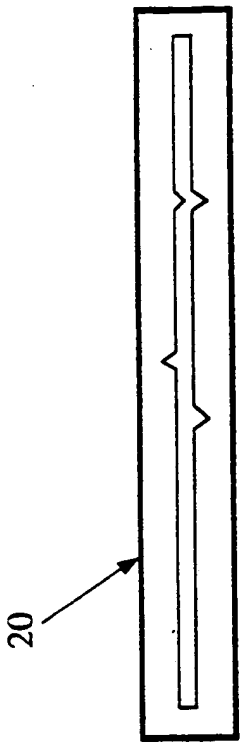

Fig 3.

A. CLASSIFICATION OF SUBJECT MATTER
Int. Cl.[5] - G06K 19/063, B42D 15/10, E05B 35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC G06K 19/06, 19/063, 19/18, B42D 15/10, 121:00, E05B 35/00, 19/16

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	US,A, 4914281 (BENTON et al) 3 April 1990 (03.04.90) See column 2, lines 3 to 17.	1-6
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A	US,A, 4628195 (BAUS) 9 December 1986 (09.12.86) See column 2, lines 21 to 58.	2-5
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1 March 1993 (01.03.93)	3 MARCH 1993 (03.03.93)
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929	Authorized officer John Thomson J W THOMSON Telephone No. (06) 2832214

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A	US,A, 4297569 (FLIES) 27 October 1981 (27.10.81) See column 3, line 18 to column 4, line 55.	1-6
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US 4856310	AT	74992	DE	3870020	EP	290330
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US 4338805	DE	2965865	EP	20512	SE	421020
	WO	8000860				
US 4297569	AT	7824	CA	1141841	DE	3068100
	EP	21499	JP	56052278		
US 3822396	BE	795909	DE	2309055	FR	2184272
	GB	1376271	JP	49007099		